

A THEORY OF PLANNED BEHAVIOUR FRAMEWORK FOR EXAMINING CITIZENS' PREPAREDNESS FOR EARTHQUAKE DISASTERS

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Abstract

The paper presents a scientific analysis of the Theory of Planned Behaviour (TPB), a widely recognised framework in the study of human behaviour. The primary objective is to conceptually examine the theory's application to citizens' preparedness for natural disasters, specifically earthquakes. The TPB is among the most prominent models in the behavioural sciences, as it elucidates the motivational factors that influence behaviour. According to its core postulates, intentions serve as immediate predictors of behaviour. Intentions represent an individual's readiness to invest effort in performing a specific behaviour and arise from the interaction of three components: attitudes toward the behaviour, subjective norms, and perceived behavioural control. Special attention is given to understanding citizens' preparedness and to analysing variables identified as predictors of behaviour in the context of earthquake preparedness, including both personal and environmental factors. Previous research indicates that gender, risk perception, age, marital status, educational attainment, economic status, and home ownership are associated with the adoption of preventive measures in the event of an earthquake.

Key words: disaster risk management, Theory of Planned Behaviour, natural disasters, earthquakes, preparedness.

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ПРИМЕНА ТЕОРИЈЕ ПЛАНИРАНОГ ПОНАШАЊА У АНАЛИЗИ ПРИПРЕМЉЕНОСТИ ГРАЂАНА НА ЗЕМЉОТРЕСЕ

Апстракт

У раду је дата научна анализа једне од најпознатијих теорија у проучавању људског понашања, теорије планираног понашања (ТПП), ради њеног концептуалног сагледавања у области припремљености грађана за природне катастрофе изазване земљотресима. ТПП представља један од најзначајнијих теоријских оквира у области бихевиоралних наука, којом се објашњавају мотивационе варијабле које утичу на понашање. Према основним постулатима ове теорије, намере се сматрају непосредним предикторима понашања. Намере одражавају спремност појединца да уложи одређени напор ради извођења конкретног понашања и представљају резултат интеракције три компоненте: става према понашању, субјективних норми и перципиране контроле понашања. Посебна пажња у раду посвећена је разумевању припремљености грађана, као и анализи варијабли које се препознају као предиктори понашања у контексту припреме за земљотресе, а које као такве обухватају како персоналне, тако и срединске факторе. Досадашња истраживања указују да су пол, перцепција ризика, старосна доб, брачни статус, ниво образовања, економски статус и власништво над стамбеним објектом повезани са предузимањем превентивних мера у случају земљотреса.

Кључне речи: управљање ризицима, теорија планираног понашања, природне катастрофе, земљотреси, припремљеност.

INTRODUCTION

Earthquakes represent one of the most severe natural hazards, characterised by sudden, abrupt, and intense ground shaking that can last for several minutes (Filipović, 2017). During their duration, earthquakes may cause the collapse of buildings, structures, and bridges, endanger critical infrastructure systems, and consequently threaten large numbers of human lives. Urbanisation and industrialisation lead to natural disasters triggered by earthquakes that progressively threaten individuals and their property (Cvetković et al., 2019; Cvetković & Filipović, 2019). Each year, thousands of earthquakes occur worldwide, and their timing and intensity remain unpredictable.

Moreover, earthquakes can act as triggers for secondary natural disasters, including landslides, tsunamis, volcanic eruptions, and others (Legrand, 2022; Lin et al., 2006). The two catastrophic earthquakes in southeastern Türkiye and northern Syria that occurred during February 2023 caused several cities to be destroyed and killed over 50,000 people, while approximately 26 million people in the affected area were in need of humanitarian assistance. The extremely high number of casualties and severe destructive consequences are explained not only by the magnitude of earthquakes (the listed magnitudes of 7.8 and 7.6 were classified as ‘major’

on the Richter scale), but also by the timing involved and the (lack of) seismic resistance of buildings (BBC, 2023).

In essence, the destructive consequences of earthquakes are the result of both the intensity of the ground motion and the proximity of exposed communities, as well as the lack of preventive mitigation measures and adaptive management aimed at protecting people and property (Cvetković & Filipović, 2017, p. 185). Basically, the damaging effects of earthquakes are due to the degree of ground motion, and the closeness of exposed communities, as well as a shortage of preventive mitigation measures and adaptive management to protect people and property (Cvetković & Filipović, 2017, p. 185). The more densely populated an area is, the more likely an earthquake-caused natural disaster is, and the more vulnerable buildings and infrastructure systems are (Ibid, pp. 30-34). Governments, local communities, and social organisations are responsible for carrying out actions to promote safety in advance of major earthquakes (Grozđanić et al., 2024). Even people can limit the damage of earthquake disasters by taking part in education and learning what safety behaviours to follow before and during an earthquake (Becker et al., 2012; Lehman & Taylor, 1987; Turner et al., 1986, p. 80; Grozđanić et al., 2024).

Despite the clear advantages of implementing preparatory and preventive measures, citizens are generally not adequately prepared (Paton et al., 2006; Rüstemli & Karanci, 1999). This raises the question: why levels of preparedness for natural hazards vary among individuals? In other terms, which factors motivate individuals to take preventive measures to reduce potential damage from hazards? The answers vary depending on the type of hazard and the region under study. Previous research findings indicate that variables such as level of education (Tekeli-Yeşil et al., 2010), income and economic status (Dedeoglu, 2006), previous experience (Russell et al., 1995), property ownership (Mulilis et al., 2000; Spittal et al., 2008), length of residence (Duval & Mulilis, 1999), and duration of stay in a given community (Tekeli-Yeşil et al., 2011) are associated with the adoption of preventive measures.

Beyond taking preventive actions against earthquake-induced natural disasters, there are additional ways to reduce earthquake risk, including land-use planning (Kerr et al., 2003) and engineering solutions (e.g., constructing earthquake-resistant buildings; early warning systems that provide several seconds of advance notice before ground shaking begins) (Satriano et al., 2011). Behaviour during an earthquake depends on several factors, including earthquake magnitude, the type of building in which a person is located, the individual's physical ability to move, and their knowledge of appropriate actions in such situations.

Among the most influential theoretical approaches to understanding human behaviour is the Theory of Planned Behaviour (TPB) (Ajzen, 1991; Ajzen et al., 2011). Across various fields, this theory has proven highly

useful and significant (Kim, 2002; Voon et al., 2011). As of April 2020, TPB has been empirically examined in more than 4,200 studies indexed in the Web of Science database, positioning it among the most used theories in the social sciences.

The TPB was therefore selected as the main theoretical framework because it offers a systematic and empirically validated model for explaining intentional behaviour in contexts where individuals are making proactive decisions. Earthquake preparedness is an example of planned preventive behaviour rather than spontaneous behaviour. It is a consequence of attitudes towards behaviours aimed at preparedness, perceived social expectations, and people's perceived capacity for readiness. This study aims to examine the determinants of citizens' earthquake preparedness exploring how attitudes, perceived behavioural control, and subjective norms influence preparedness intentions and behaviour. Beyond this psychological dimension, the study uses a combination of sociodemographic variables, defined in previous studies, as crucial for predicting risk behaviour. These factors range from variables such as age, gender, marital status, income, education, prior earthquake experience, home ownership, and length of residence to risk perception, attitudes and beliefs related to hazards, and trust in institutions as variables in this sample. This study constitutes a conceptual review undertaken upon analysis of pertinent scientific literature.

TPB IN THE FIELD OF DISASTER RISK MANAGEMENT

TPB represents an extension of the Theory of Reasoned Action (TRA) introduced by Ajzen and Fishbein (Sheppard et al., 1988), which explains individual behaviour in a highly systematic and comprehensible manner (Conner & Armitage, 1998). Consistent with the original TRA, the central determinant in TPB is an individual's intention to perform a given behaviour (Ajzen, 1991). Both TRA and TPB originate from attitude theory, which was developed on the basis of examining how attitudes influence behaviour. It was observed that attitudes—once considered the primary determinants of behaviour—were not always strong predictors, and that the relationship between attitudes and behaviour was in some cases extremely weak or even non-existent (Fishbein & Ajzen, 1975).

A few years later, Ajzen extended the model of behaviour prediction through the inclusion of perceived behavioural control to the existing list of predictors that is able to explain not only direct intentions, but in numerous instances, directly cause behaviour along with intention (Ajzen, 1991). In subsequent research, Ajzen and colleagues studied motives that directly or indirectly cause behaviour with an eye to determining evidence-based patterns for how conduct can be predicted (Madden et al., 1992).

Accordingly, intentions are examined through motivational determinants that indicate the degree to which individuals are prepared to per-

form a given behaviour and the effort they intend to invest in its execution. In general, stronger behavioural intentions are associated with a higher likelihood of performing the behaviour (Ajzen, 1991). Ajzen has emphasised that intentions can be translated into actual behaviour only when the behaviour is under volitional control, meaning that individuals are able to freely decide whether to perform the action. While some behaviours may meet this requirement reasonably well, the performance of most behaviours depends, at least to some extent, on motivational factors such as the availability of necessary opportunities and resources including time, money, skills, and cooperation from others (Ajzen, 1991). Recent findings confirm the central role of intention in shaping preparedness behaviour. For example, Zaremohzzabieh et al. (2021) reported that preparedness intention represents a significant positive predictor of actual earthquake preparedness, indicating that individuals who express stronger intentions are more likely to translate them into concrete preparedness actions.

Furthermore, the TPB highlights that human behaviour coexists with both direct and indirect intention, as well as with the perception of behavioural control. Therefore, in addition to attitudes toward the behaviour, TPB identifies subjective norms and perceived behavioural control as direct predictors of planned intentional behaviour (Bosnjak et al., 2020). Explaining human behaviour in everyday circumstances and in contexts such as disasters is highly complex and requires substantial analytical effort. Attitudes toward a specific behaviour are formed on the basis of particular beliefs about that behaviour.

Another important predictor of behavioural intention is subjective norm, defined as individuals' perceptions of social pressure regarding whether a specific behaviour should be performed (Conner & Armitage, 1998, Tabatabaei et al, 2025). In the present study, subjective norms showed a positive but non-significant association with disaster preparedness behaviour, while a statistically significant relationship was found with preparedness intentions, suggesting that subjective norms influence preparedness primarily through intentions (Tabatabaei et al, 2025). Subjective norms represent the influence that the social environment exerts on an individual's behaviour and depend on the importance the individual assigns to the opinions of others. A significant variable in the theory is perceived behavioural control, which relates to an individual's perception of their ability to carry out a given behaviour and of the presence or absence of necessary resources (Montaño & Kasprzyk, 2015). In contrast, and Rezza's (2021) study in Indonesia indicated that subjective norms do not directly influence disaster preparedness behaviour; instead, they affect preparedness indirectly through attitudes, suggesting a mediated pathway between social norms and behaviour.

Perceived behavioural control may be understood as individuals' assessment of how easy or difficult it is to carry out a planned behaviour, recognising that perceived resource constraints can limit motivation even

in the presence of social support. Within this framework, it consists of two interrelated components: perceived controllability (the perceived ability to control the behaviour) and perceived self-efficacy (confidence in one's own abilities). It also explains how certain factors (personal, demographic, and environmental) influence behaviour through their effects on behavioural beliefs, perceived control, subjective norms, and related constructs (Ajzen et al., 2011). TPB further emphasises that there is a mutual interaction among these factors (attitudes, intention, and perceived behavioural control) (Ajzen et al., 2011). More specifically, the influence of attitudes and subjective norms on intention is moderated by perceived behavioural control. As a general rule, the more favourable the attitude and subjective norm, and the greater the perceived control, the stronger the individual's intention to perform the behaviour.

Finally, when individuals possess a sufficient level of actual behavioural control, they are expected to translate their intentions into action as opportunities arise. Accordingly, intention is considered the most immediate antecedent of behaviour. To the extent that perceived behavioural control accurately reflects actual control, it may function as a proxy for actual control and enhance the prediction of the behaviour. However, empirical evidence suggests that perceived behavioural control does not always translate into stronger preparedness intentions, particularly in collectivist contexts where earthquake preparedness depends on coordinated, collective action rather than individual effort. In such settings, individuals may rely on others' actions or avoid bearing individual costs, which can limit overall participation and reduce the effectiveness of risk reduction measures (Zaremohzzabie et al., 2021).

In this regard, TPB can be considered highly effective in predicting human behaviour in specific contexts. It enables researchers to anticipate how people will respond to certain changes in the external environment and, in turn, identify ways to improve their responses. However, explaining decision-making regarding the adoption of preventive measures—as a distinct phase of disaster risk management—can be highly complex and approached from multiple perspectives (Ajzen et al., 2011; Armitage & Conner, 2001; Bosnjak et al., 2020). Given the strong theoretical value of TPB, many scholars have expanded the original model by including additional variables such as experience, habits, moral obligations, and desires. Ajzen (Ajzen et al., 2011) emphasises that, apart from attitudes, subjective norms, and perceived behavioural control, the theory remains open to incorporating other variables that explain human behaviour, provided they are sufficiently well-established through prior research (Ajzen, 2020; Ajzen et al., 2011; Bosnjak et al., 2020).

It is also important to note that studies in disaster risk management highlight a number of psychological factors that may influence the failure to adopt preventive measures for earthquake disasters. Among these factors, fatalism and locus of control are frequently mentioned (Rotter, 1992).

Individuals who hold a fatalistic worldview believe that there is little point in taking action during disasters, as human efforts are perceived as powerless to change such situations. According to this perspective, intelligence and willpower cannot improve outcomes because all events—including human behaviour—are seen as predetermined and inevitable.

Another psychological factor previously identified is the 'locus of control,' first defined by the American psychologist Julian Rotter, who argued that people differ in their expectations regarding whether situations can be influenced by internal or external factors. According to Rotter, individuals with an external locus of control believe that they cannot personally influence events that happen to them; instead, other people or external circumstances are responsible for the outcomes (Rotter, 1966). Such individuals tend to view the strength of the community, government actions, luck, or fate as determinants of what happens in their lives. Conversely, individuals with an internal locus of control believe that they themselves are responsible for what occurs to them (Rotter, 1966). Consequently, people with an internal locus of control tend to make greater efforts to manage their circumstances compared to those with an external locus of control. Some researchers have gone further, suggesting that individuals with an internal locus of control are more motivated and proactive in overcoming obstacles, whereas those who believe that external forces or other people are responsible for their outcomes tend to be more passive and less motivated to engage in preventive actions (Beitel et al., 2005).

In addition to TPB, numerous models are also grounded in the Theory of Reasoned Action. Notably, the Protection Motivation Theory (Rogers, 1983) and the Person Relative to Event Theory (Duval & Mulilis, 1999; Mulilis & Duval, 1995; Mulilis, 1996) are frequently cited. Both models represent cognitive frameworks that focus on aspects such as perceived probability, severity, self-efficacy, expectations, and responsibility for protection. Alongside these theories, Lindell and Perry (2000, 2012) emphasise the importance of social context within their Protective Action Decision Model, although they do not elaborate in detail on the nature of these influences. Paton and colleagues (Paton, 2001; Paton et al., 2006) developed a more comprehensive model that incorporates social influences within the preparedness process, partially identifying key social characteristics to which individuals must be exposed, such as trust, community involvement, problem articulation, and empowerment.

Understanding Preparedness

Preparedness refers to the actions and measures implemented prior to a disaster in order to enable an effective response to its destructive impacts. More precisely, these are activities that guarantee that the resources required for an efficient response are available before a disaster occurs or can be quickly obtained when needed (Lindell & Perry, 2000). Earthquake

preparedness is considered an important means of mitigating risk (Jahangiri, 2010). Accordingly, preparedness is defined as a necessary strategy implemented prior to an earthquake, aimed at preventing harm and casualties during seismic events. Preparedness actions include collecting essential survival items (e.g., food, water, flashlight, radio, and medications), developing household plans for what to do in the event of an earthquake, undertaking mitigation measures (e.g., retrofitting buildings and securing objects within the home), developing individual survival skills, and engaging in community actions related to earthquake preparedness (Kirschenbaum, 2002; Mulilis et al., 2000; Spittal et al., 2008).

The disaster risk management literature shows broad consensus regarding the types of measures needed to enhance preparedness levels (Bruneau et al., 2003; Edwards, 1993). These include: essential survival measures (possessing a three-day supply of water and food, a flashlight, operated radio, spare batteries, fire extinguisher, smoke detector, first-aid kit, main water, gas, and electricity shutoff valves, tools, etc.); mitigation actions (including securing objects to walls and ceilings; reinforcing interior structures; storing heavy items on the floor or lower shelves; keeping water containers away from electrical devices; strengthening roofs and chimneys); preparedness plans (contact information for emergency services, family evacuation plans, procedures for different types of disasters); skills (knowledge of appropriate response actions, first-aid training); and social activities (membership in relevant relief organisations; attending community meetings on various hazards).

However, an individual's ability and intention to prepare for, respond to, and recover from a disaster depend on multiple factors that often lie outside personal control. The severity and duration of the event, the effectiveness of early warning systems, the individual's health status, and access to information sources are among the key factors influencing response capacity and recovery (Fernandez et al., 2002). A further challenge concerns the need to ensure that preparedness measures are continuously maintained and updated by individuals over time (e.g., through the replenishment of food and water supplies and the availability of batteries).

VARIABLES AS PREDICTORS OF BEHAVIOUR

Human behaviour prior to an earthquake and decision-making related to undertaking preventive measures are influenced by various personal and environmental factors (Krishnaraj, 1997; Lindell & Perry, 2000, 2012; Major, 1999; Mileti & Darlington, 1995; Osaki & Minowa, 2001). Previous studies have shown that variables such as gender, risk perception, age, marital status, level of education, economic status, and home ownership are associated with undertaking preventive measures in the event of an earthquake (Dooley et al., 1992; Roces et al., 1992; Tekeli-Yeşil et al.,

2011). The table highlights both consistent positive and context-dependent associations across different dimensions of preparedness.

Table 1. Patterns of Earthquake Preparedness across Selected Sociodemographic Variables

Variable	Pattern Observed	Association	References
Gender – risk perception & communication	Women tend to report higher risk perception and more frequent communication with neighbours regarding earthquake risks	Positive (women)	Fothergill (1996); Armaş (2006); Grozdanić et al. (2024)
Gender – structural preparedness	Men more frequently report engagement in structural preparedness measures such as house reinforcement	Positive (men)	Gustafsson (1998); Grozdanić et al. (2024); Ao et al (2022)
Gender – overall preparedness	Overall preparedness levels vary across studies and contexts	Mixed / context-dependent	Tomio et al. (2014); Devi & Sharma (2015)
Age	Preparedness generally increases with age but may decline among the oldest cohorts	Generally positive; non-linear	Melick & Logue (1986); Tang & Feng (2018)
Marital status	Married individuals sometimes demonstrate higher preparedness, though many studies report no significant effect	Inconsistent	Dooley et al. (1992); Spittal et al. (2008); Paul & Bhuiyan, 2010; Devi & Sharma, 2015; Rostami-Moez et al. (2020)
Education level	Higher education associated with greater preparedness and proactive behaviour	Generally positive	Hoffmann & Muttarak (2017); Atreya et al. (2017); Kohn et al. (2012) Ao et al (2022)
Income / economic status	Higher income facilitates access to preparedness and mitigation resources	Positive	Kahn (2005); FEMA (2014); Grozdanić et al. (2024)
Home ownership	Homeowners are more likely to invest in mitigation and preparedness measures	Positive	Mulilis et al. (2000); Kalaça, et al. (2007); Rostami-Moez et al. (2020)
Prior earthquake experience	Previous exposure increases risk awareness and likelihood of preparedness actions	Positive	Lindell (2013); Shapira et al. (2018); Rostami-Moez et al. (2020)

Source: Author's synthesis based on the reviewed literature.

Regarding the influence of risk perception on decision-making related to preventive measures in earthquake-related emergencies, existing research findings are inconsistent. For instance, Solberg and colleagues (Solberg et al., 2010) found a very weak association between household preparedness for responding to earthquake emergencies and risk perception.

In other studies, risk perception is considered an important determinant of risk-related behaviour and a basis for decision-making in risk management (Lindell, 2013; Lindell & Perry, 2000). Perceptions are regarded as important factors influencing how individuals react and respond to danger. Ge and colleagues note that risk perception is a significant predictor influencing behaviour (mitigation or preparedness) (Ge et al., 2011). Gender differences in decision-making related to preventive measures in the case of earthquakes are often associated with social stereotypes (Mulilis, 1999). However, some empirical research indicates that women, compared to men, generally exhibit higher risk perception (Fothergill, 1996; Greenberg & Schneider, 1995; Armaş, 2006), which is partly explained by different cognitive responses to threat (Mulilis et al., 2000). Research by Gustafson (1998) showed that gender differences may manifest depending on the type of risk—women tend to be more concerned about environmental and health-related risks, whereas men react more strongly to physical safety and industrial accidents. There is also evidence that women possess a higher level of household preparedness for earthquakes (Tomio et al., 2014), although opposite findings exist that do not confirm a significant effect of gender on preparedness levels (Devi & Sharma, 2015). More recent cross-cultural evidence further suggests that gender-based differences manifest across multiple dimensions of preparedness, with women reporting lower perceived community preparedness but higher engagement in risk-related communication with neighbors, whereas men are more likely to engage in structural mitigation measures (Ao et al., 2022) such as earthquake-resistant house reinforcement (Grozđanić et al., 2024).

Age represents an important variable in studying decisions about undertaking preventive measures in the event of an earthquake. Although physiologically older individuals may react more slowly, research shows that they are often better informed and, to some extent, more prepared to respond (Melick & Logue, 1986; Devi & Sharma, 2015). However, the consequences they experience during earthquakes may be more severe due to health conditions and physical limitations. At the same time, some studies report that with increasing age the likelihood of undertaking disaster preparedness measures may decrease, particularly for actions requiring physical effort or financial investment (Tang & Feng, 2018; Ao et al., 2022).

Research findings on the influence of marital status on decision-making related to undertaking preventive measures in the event of an earthquake are inconsistent. Several authors (Spittal et al., 2008; Paul & Bhuiyan, 2010; Devi & Sharma, 2015) did not find a statistically significant

association between marital status and the level of preparedness. In contrast, Dooley and colleagues (1992) indicate that married individuals are more likely to implement preparedness measures compared to those who are not married.

In addition to marital status, studies have shown that the length of residence in a housing unit has a significant effect on preparedness, given that time is required to undertake structural modifications and increase the resilience of the dwelling (Duval & Mulilis, 1999; Spittal et al., 2008). Recent evidence from Iran shows a statistically significant association between marital status and household earthquake preparedness, with married participants reporting higher preparedness scores than unmarried participants (Rostami-Moez et al., 2020).

Household income represents an important factor in deciding whether to undertake preventive measures in earthquake-related emergencies. Higher income enables better preparedness and access to resources necessary for mitigating the consequences of disasters (Kahn, 2005). Research indicates a statistically significant association between income level and readiness to respond, with higher-income respondents more likely to believe in the effectiveness of preparedness measures (FEMA, 2014). Recent cross-country evidence from Montenegro, North Macedonia, and Serbia suggests that income is not a consistent predictor across all preparedness dimensions; however, it emerged as a significant predictor specifically for earthquake risk awareness, indicating that socioeconomic resources may shape awareness more than direct preparedness actions (Grozđanić et al., 2024).

A study conducted in Dhaka showed that the risk of fatal outcomes due to earthquakes is significantly higher in developing countries compared to developed nations (Parajuli & Parajuli, 2017). Additionally, home ownership has been identified as a factor that positively influences willingness to undertake preventive actions, particularly in the context of Turkey (Kalaça, Aytekin & Çalı, 2007).

Attitudes and beliefs play a key role in decision-making regarding the implementation of earthquake preparedness measures, as they influence how individuals interpret information about risks. People who believe in the importance of safety are more likely to take hazard information seriously and engage in preventive behaviour (Becker et al., 2012). Becker and colleagues identify three key types of beliefs relevant to preparedness: risk beliefs, preparedness beliefs, and personal beliefs.

Experience with disasters often fosters the belief that they can occur at any time. A positive relationship with institutions and a sense of trust increase the likelihood that individuals will take personal responsibility for their own safety (Lion et al., 2002). Studies have shown that preparedness measures are more effective when they are perceived as simple and feasible (Farley et al., 1993; Mileti & Darlington, 1995). Prior experience with earthquakes is considered an important factor in deciding whether to un-

undertake preventive measures, as individuals who have experienced an earthquake are more likely to adopt preparedness behaviours than those without such experience. This experience refers to previous situations in which individuals were exposed to earthquakes and learned lessons that may contribute to improved preparedness (Lindell, 2013). Although one might expect prior experience to motivate individuals to take protective actions, research findings are mixed. Shaw, Sharma, and Takeuchi (2009) did not find a statistically significant effect of previous experience on preparedness level. Conversely, some studies confirm that previous losses and damages are correlated with adaptive behaviour (Lindell & Perry, 2000; McClure, Johnston and Henrich, 2013). In addition, evidence suggests that migrants tend to exhibit higher levels of disaster preparedness compared to local populations, potentially due to heightened risk awareness shaped by prior exposure to diverse hazard contexts (Green et al., 2021).

Education emerges as an important factor in improving citizens' readiness to respond in emergency situations, including earthquakes. Studies have highlighted the importance of education through interactive and practical methods (Izadkhah & Hosseini, 2005; Shaw et al., 2004), but also the inconsistency of findings regarding the impact of formal education level (Kohn et al., 2012; Devi & Sharma, 2015). Innovative approaches such as simulations and games have proven effective in engaging students (Becker et al., 2012; Johnson et al., 2014), while research from Iran and Turkey has demonstrated a link between lack of knowledge and low preparedness (Ranjbar et al., 2018; Güngörmüş et al., 2012). More recent empirical evidence further supports the positive role of education, indicating that higher educational attainment is associated with greater engagement in disaster preparedness behaviours (Ao et al., 2022; Hoffmann & Muttarak, 2017). Therefore, although findings on the influence of education vary, the literature consistently confirms that knowledge is a prerequisite for effective preparedness in the event of an earthquake.

CONCLUSION

An analysis of the available literature and relevant research findings indicates that citizens' decisions to undertake preventive safety measures in the event of an earthquake are not the result of the objective level of hazard alone, but rather of a complex interaction of multiple individual and social factors. Identifying behavioural predictors, whose foundations can be found in the TPB, represents an important step toward improving the level of citizens' preparedness for earthquakes, as well as strengthening the effectiveness of earthquake disaster risk management systems.

Although there are many theories related to planned behaviour, the current study incorporates disaster-specific psychological and sociodemographic parameters such as age, gender, marital status, income, education level, and prior experience that have a substantial impact on behavioural

patterns and readiness to respond to earthquake-related emergencies. All of these elements shape particular measures of risk perception, motivation to respond, and preparedness behaviours.

Such insights could form the basis for risk management programs and measures to motivate individuals to anticipate probable earthquakes. This also encompasses preparedness awareness campaigns, educational programs, innovative content, and upgrades to critical infrastructure. In order to adopt appropriate legislative regulations, bylaws, and strategies aimed at enhancing citizens' safety during earthquakes, it is essential to provide decision-makers with adequate scientific information explaining how individual and social factors influence preventive behaviour and the undertaking of preparedness measures, as well as the obstacles to their implementation across all phases of disaster risk management.

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ПРИМЕНА ТЕОРИЈЕ ПЛАНИРАНОГ ПОНАШАЊА У АНАЛИЗИ ПРИПРЕМЉЕНОСТИ ГРАЂАНА НА ЗЕМЉОТРЕСЕ

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Резиме

Рад представља концептуалну и прегледну студију са циљем сагледавања примене Теорије планираног понашања (ТПП) у анализи припремљености грађана за природне катастрофе изазване земљотресима. Наиме, иако земљотреси представљају једну од најразорнијих природних опасности, ниво индивидуалне припремљености у многим друштвима остаје низак. Стога је разумевање бихевиоралних детерминанти које утичу на припремљеност од изузетног значаја за ефикасно управљање ризицима од катастрофа изазваних земљотресима. Стога, ослањајући се на оквир ТПП, у раду се анализира начин на који ставови према понашању у вези са припремљеношћу, субјективне норме и перципирана контрола понашања обликују намере и понашање појединаца у контексту припреме за земљотресе. Поред основних конструктора ТПП, рад обухвата и преглед емпиријских налаза о низу социодемографских, психолошких и контекстуалних фактора, као што су старост, пол, ниво образовања, приход, перцепција ризика, претходно искуство са земљотресима, власништво над стамбеним објектом и поверење у институције, који су у досадашњим истраживањима идентификовани као значајни предиктори припремљености. Анализа указује да припремљеност за земљотресе није условљена искључиво објективним карактеристикама опасности, већ да је резултат сложене интеракције индивидуалних уверења, друштвених утицаја, перципиране контроле и доступних ресурса. Резултати потврђују вредност ТПП као релевантног теоријског оквира за објашњавање и предвиђање понашања у контексту припремљености за катастрофе. У закључку се истиче да идентификовање бихевиоралних предиктора заснованих на ТПП може допринети унапређењу припремљености грађана за земљотресе, као и јачању ефикасности система управљања ризицима од катастрофа. Добијени увиди могу послужити као основа за нова емпиријска истраживања, као и за развој циљаних програма припремљености, образовних иницијатива и јавних политика усмерених на унапређење индивидуалне и друштвене отпорности на катастрофе изазване земљотресима.